VENABLE, BAETJER, HOWARD & CIVILETTI, LLP
Including professional corporations
1201 New York Avenue, N.W., Suite 1000
Washington, D.C. 20005-3917
(202) 962-4800, Fax (202) 962-8300
www.venable.com

OFFICES IN
WASHINGTON, D.C
MARYLAND
VIRGINIA

VENABLE
ATTORNEYS AT LAW

June 22, 2001

Assistant Commissioner for Patents
Washington, D.C. 20231

Attention: Box PCT - DESIGNATED/ELECTED OFFICE (DO/EO/US)

FORM PTO-1390 (REV 5-93) U S DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER 31671-171340
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371		U.S. APPLICATION NO. (If known, see 37 CFR 1.5) Not Yet Assigned
INTERNATIONAL APPLICATION NO. PCT/SE99/02460	INTERNATIONAL FILING DATE 22 December 1999	PRIORITY DATE CLAIMED: 24 December 1998
TITLE OF INVENTION - see attached pages -		
APPLICANT(S) FOR DO/EO/US - see attached pages -		

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. X This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.
3. X This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(l).

- See attached pages for additional data –

RK/trl
DC2DOCS1\296764

VENABLE, BAETJER, HOWARD & CIVILETTI, LLP
Including professional corporations

1201 New York Avenue, N.W., Suite 1000
Washington, D.C. 20005-3917
(202) 962-4800, Fax (202) 962-8300
www.venable.com

OFFICES IN
WASHINGTON, D.C.
MARYLAND
VIRGINIA

VENABLE
ATTORNEYS AT LAW

June 22, 2001

Assistant Commissioner for Patents
Washington, D.C. 20231

Attorney Docket: 31577-170129

Attention: PCT-DO/US

Re: International Application PCT/SE99/02460 filed December 22, 1999
Priority Claimed is claimed from December 24, 1998.

Inventor(s): Simon VALKENBURG and Norbert PITZER

Title: "A METHOD OF FABRICATING AN AIR-BAG AND AN AIR-BAG FABRICATED BY THE METHOD"

Sir:

Submitted herewith, as the first submission, are the following for the purposes of entering the national stage for the USA under 35 U.S.C. 371**(c), immediate national examination under 35 U.S.C. 371(f) being requested**.

X English-language International Application No. PCT/SE99/02460 published as WO 00/38954.

X One Sheet of Drawings, Figs. 1-2.

X Preliminary Amendment.

X An Information Disclosure Statement under 37 CFR 1.97 and 1.98.

Fees: (see formula below) Check Enclosed

Basic National Fee $1,000/$970.00..... $1,000.00

TOTAL FEES FOR THE ABOVE APPLICATION... $1,000.00

VENABLE
ATTORNEYS AT LAW

Assistant Commissioner for Patents
Washington, D.C. 20231

In the event there is attached hereto no check, or a check for an insufficient amount, please charge the fee to our Account No. 22-0261 and notify us accordingly.

Please use the following address for corresponding with all counsel of record:

VENABLE
P.O. Box 34385
Washington, D.C. 20043-9998

Respectfully submitted,

Robert Kinberg
Registration No. 26,924
Telephone: (202) 962-4800
Telefax: (202) 962-8300

RK/trl

DC2DOCS1\296764

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Simon VALKENBURG et al.

International Appl. No. PCT/SE99/02460

Int'l Filing Date: December 22, 1999

Filed: CONCURRENTLY

Art Unit: UNKNOWN

Examiner: UNKNOWN

Atty. Docket No.31577-170129

For: A METHOD OF FABRICATING AN AIR-BAG AND AN AIR-BAG FABRICATED BY THE METHOD

Customer No.

26694

PATENT TRADEMARK OFFICE

Preliminary Amendment

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to calculation of the fees, please amend the claims attached to the specification as follows:

5. (Amended) A method according to Claim 1 wherein the sealant is formed of polyamide, polyester, polyvinylchloride or polyurethane silicone.

6. (Amended) A method according to Claim 1 wherein the bag is heated as the sealant is blown into contact with the interior of the bag.

7. (Amended) A method according to Claim 1 wherein the propellant gas is heated.

8. (Amended) A method according to Claim 1wherein the sealant layer is a reinforcing layer.

9. (Amended) A method according to Claim 1 wherein the air-bag is a side-curtain air-bag.

10. (Amended) An air-bag when fabricated by a method according to Claim 1.

REMARKS

This Preliminary Amendment is made to eliminate multiple claim dependency and a minor informality. Examination on the merits of the application is requested. A marked up version showing the changes made to the claims is attached.

Respectfully submitted,

Date: June 22, 2001

Robert Kinberg
Registration No. 26,924
VENABLE
P.O. Box 34385
Washington, D.C. 20043-9998

Telephone: (202) 962-4800
Telefax: (202) 962-8300

RK/trl
DC2DOCS1/296809

VERSION WITH MARKINGS TO SHOW CHANGES MADE

5. (Amended) A method according to ~~any one of the preceding~~ Claim~~s~~ 1 wherein the sealant is formed of polyamide, polyester, polyvinylchloride or polyurethane silicone.

6. (Amended) A method according to ~~any one of the preceding~~ Claim~~s~~ 1 wherein the bag is heated as the sealant is blown into contact with the interior of the bag.

7. (Amended) A method according to ~~any one of the preceding~~ Claim~~s~~ 1 wherein the propellant gas is heated.

8. (Amended) A method a method according to ~~any one of the preceding~~ Claim~~s~~ 1 wherein the sealant layer is a reinforcing layer.

9. (Amended) A method according to ~~any one of the preceding~~ Claim~~s~~ 1 wherein the air-bag is a side-curtain air-bag.

10. (Amended) An air-bag when fabricated by a method according to ~~any one of the preceding~~ Claim~~s~~ 1.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Applicants	:	Simon VALKENBURG et al.	
Appln. No.	:	09/869,105	
Filed	:	December 22, 1999	
For	:	A METHOD OF FABRICATING AN AIR-BAG AND AN AIR-BAG FABRICATED BY THE METHOD	**SECOND PRELIMINARY AMENDMENT**
Atty. Dkt.	:	31577-170129	
Customer No.	:	26694 PATENT TRADEMARK OFFICE	

August 30, 2001

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to the initial examination of the above-identified application, please amend the same as follows:

IN THE SPECIFICATION:

On page 1, before the first paragraph, please insert the title centered:

--BACKGROUND OF THE INVENTION--.

On page 3, between lines 7 and 8, please insert the title centered:

--SUMMARY OF THE INVENTION--.

On page 4, between lines 11 and 12, please insert the title centered:

--BRIEF DESCRIPTION OF THE DRAWINGS--.

On page 5, before the first paragraph, please insert the title centered:

--DETAILED DESCRIPTION OF THE INVENTION--.

IN THE CLAIMS:

Please amend claims 1, 2 and 10 as follows (a marked-up version of the amended claims is attached to this Amendment):

1. (Amended) A method of fabricating an air-bag, the method comprising the following steps:

forming a bag from at least one layer of fabric;

introducing a sealant into an interior of the bag and blowing the sealant into contact with the interior of the bag with a propellant gas so that the sealant material forms a sealant layer on the interior of the bag.

2. (Amended) A method according to Claim 1, wherein the sealant is in the form of a parison of a synthetic polymer material carried on a mandrel, and said blowing step comprises injecting said propellant gas through the mandrel.

10. (Twice Amended) An air-bag fabricated by a method according to Claim 1.

REMARKS

This Second Preliminary Amendment revises the specification adding the appropriate headings and amending claims 1, 2 and 10. In particular, claim 1 is amended to positively recite the implied interior of the bag. Accordingly, claims 1-10 are pending in instant application.

Additional attached is a marked-up version of the specification and claims showing the changes made by the current amendment. The attachment is captioned **"Version with Markings to Show Changes Made."**

Respectfully submitted,

Catherine M. Voorhees
Registration No. 33,074
VENABLE
P.O. Box 34385
Washington, D.C. 20043-9998
Telephone: (202) 962-4800
Direct Dial: (202) 962-4043
Telefax: (202) 962-8300

CMV/srb
DC2/313762

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 1, 2 and 10 have been amended to read as follows:

1. (Amended) A method of fabricating an air-bag, the method comprising the following steps [of]:

forming a bag from at least one layer of fabric;

introducing a sealant into an interior of the bag and blowing the sealant into contact with the interior of the bag with a propellant gas so that the sealant material forms a sealant layer on the interior of the bag.

2. (Amended) A method according to Claim 1, wherein the sealant is in the form of a parison of a synthetic polymer material carried on a mandrel, and said blowing step [consisting of] comprises injecting said propellant gas through the mandrel.

10. (Twice Amended) An air-bag [when] fabricated by a method according to Claim 1.

A method of fabricating an air-bag and an air-bag fabricated by the method

BACKGROUND OF THE INVENTION

THE PRESENT INVENTION relates to a method of fabricating an air-bag and more particularly relates to an air-bag which, when inflated, is intended to be located between the head or body of the driver or front-seat occupant of the motor vehicle and the adjacent window. Such an air-bag may be termed a side-curtain and may be adapted to be inflated in the event that a side impact or roll-over situation should occur. A side-curtain may extend adjacent the head of the driver or front seat occupant of the motor vehicle, or may extend from the front of the vehicle to the rear of the motor vehicle, along the side of the vehicle, thus providing protection, not only for the driver or front seat occupant of the vehicle, but also for an occupant of the rear seat of the vehicle.

A side-curtain has to be deployed extremely rapidly if it is to provide protection in the event that a side impact should occur and consequently the side-curtain is inflated by injecting a large quantity of gas into the side-curtain very rapidly. The inflation is consequently violent, and the fabric may stretch at certain points.

In order to improve the gas-tightness of the fabric that makes an air-bag, it is conventional to provide the fabric with a coating of a sealant material such as a silicone rubber. In certain air-bags, such as air-bags intended to provide protection

It has been found that the silicone rubber applied to the exterior of the air-bag provides various disadvantages in that the silicone rubber is tacky and therefore exerts a high friction. Consequently, during deployment of the air-bag, the air-bag may stick to the glass or the material forming the "B"-Post of the vehicle, thus leading to distortion of the air-bag during the inflation process. Should the air-bag contact the passenger or occupant of the vehicle during the inflation process, the air-bag may impart an abrasion wound.

Summary of the Invention

The present invention seeks to provide an air-bag in which the disadvantages of the exterior-coated air-bag as described above are obviated or reduced.

According to one aspect of this invention there is provided a method of fabricating an air-bag, the method comprising the steps of forming a bag from at least one layer of fabric, introducing a sealant into the bag and blowing the sealant into contact with the interior of the bag with a propellant gas so that the sealant material forms a sealant layer on the interior of the bag.

In one embodiment the sealant is in the form of a parison of a synthetic polymer material carried on a mandrel, said blowing step consisting of injecting said propellant gas through the mandrel.

Conveniently the parison is coated with adhesive.

In an alternative embodiment the sealant is introduced into the bag in the form of an aerosol or a suspension of powder in the propellant gas.

Preferably the sealant is formed of polyamide, polyester, polyvinylchloride or polyurethane silicone.

Conveniently the bag is heated as the sealant is blown into contact with the interior of the bag.

Advantageously the propellant gas is heated.

Preferably the sealant layer is a reinforcing layer.

Conveniently the air-bag is a side-curtain air-bag.

The invention also relates to an air-bag when fabricated by a method as described above.

According to another aspect of this invention there is provided an air-bag comprising a bag formed from a layer of fabric, the interior of the air-bag being provided with a sealant layer.

Conveniently the sealant layer is a reinforcing layer.

BRIEF DESCRIPTION OF THE DRAWINGS

In order that the invention may be more readily understood, and so that further features thereof may be appreciated, the invention will now be described, by way of example, with reference to the accompanying drawings in which:

FIGURE 1 is a diagrammatic view of a simple embodiment of air-bag in accordance with the invention during the manufacturing process, and

FIGURE 2 is a corresponding view of an alternative embodiment of the invention.

DETAILED DESCRIPTION of THE INVENTION

Referring now to Figure 1 of the accompanying drawings an air-bag 1 which is in the form of a side-curtain, is formed from two super-imposed layers of fabric 2 inter-connected by a plurality of seams 3 which inter-connect selected areas of the upper and lower layers of fabric forming the air-bag 1. The seams 3 define a gas flow duct 4 extending substantially parallel with the upper edge of the bag, and also define a plurality of substantially vertical parallel spaced cells 5, each of which communicate, by means of a communication region 6, with the gas flow duct 4. The air-bag 1 is also provided with a plurality of protruding lugs 7 which protrude from a position adjacent the gas flow duct 4 by means of which the air-bag may be mounted in position in a motor vehicle.

The air-bag, as thus far described, is formed from an appropriate fabric which may, for example, be a conventional fabric woven from yarns or fibres made from polyamide, polyester, polyvinylchloride or some other appropriate synthetic material, although it is envisaged that the fabric may be knitted or non-woven. The seams 3 may be formed by stitching together the super-imposed layers of fabric, although it is preferred that the seams are fabricated by weaving together threads from the upper layer of fabric together with threads from the lower layer of fabric in selected regions to form the seams, generally as described in WO 90/09295.

Following the initial fabrication of the bag, a reinforcing sealant coating is applied to the interior of the bag. The reinforcing sealant coating is applied to the interior of the bag by forming, on an hollow air injecting mandrel 10 a parison of a plastics material 11, such as a polyamide, polyester or polyvinylchloride material, or polyurethane silicone with the parison being in a substantially plastic state.

The exterior of the parison may be coated with adhesive. The mandrel, together with the parison, is inserted into the gas flow passage 4 of the bag. To

A method of fabricating an air-bag and an air-bag fabricated by the method

THE PRESENT INVENTION relates to a method of fabricating an air-bag and more particularly relates to an air-bag which, when inflated, is intended to be located between the head or body of the driver or front-seat occupant of the motor vehicle and the adjacent window. Such an air-bag may be termed a side-curtain and may be adapted to be inflated in the event that a side impact or roll-over situation should occur. A side-curtain may extend adjacent the head of the driver or front seat occupant of the motor vehicle, or may extend from the front of the vehicle to the rear of the motor vehicle, along the side of the vehicle, thus providing protection, not only for the driver or front seat occupant of the vehicle, but also for an occupant of the rear seat of the vehicle.

A side-curtain has to be deployed extremely rapidly if it is to provide protection in the event that a side impact should occur and consequently the side-curtain is inflated by injecting a large quantity of gas into the side-curtain very rapidly. The inflation is consequently violent, and the fabric may stretch at certain points.

In order to improve the gas-tightness of the fabric that makes an air-bag, it is conventional to provide the fabric with a coating of a sealant material such as a silicone rubber. In certain air-bags, such as air-bags intended to provide protection

It has been found that the silicone rubber applied to the exterior of the air-bag provides various disadvantages in that the silicone rubber is tacky and therefore exerts a high friction. Consequently, during deployment of the air-bag, the air-bag may stick to the glass or the material forming the "B"-Post of the vehicle, thus leading to distortion of the air-bag during the inflation process. Should the air-bag contact the passenger or occupant of the vehicle during the inflation process, the air-bag may impart an abrasion wound.

The present invention seeks to provide an air-bag in which the disadvantages of the exterior-coated air-bag as described above are obviated or reduced.

According to one aspect of this invention there is provided a method of fabricating an air-bag, the method comprising the steps of forming a bag from at least one layer of fabric, introducing a sealant into the bag and blowing the sealant into contact with the interior of the bag with a propellant gas so that the sealant material forms a sealant layer on the interior of the bag.

In one embodiment the sealant is in the form of a parison of a synthetic polymer material carried on a mandrel, said blowing step consisting of injecting said propellant gas through the mandrel.

Conveniently the parison is coated with adhesive.

In an alternative embodiment the sealant is introduced into the bag in the form of an aerosol or a suspension of powder in the propellant gas.

Preferably the sealant is formed of polyamide, polyester, polyvinylchloride or polyurethane silicone.

Referring now to Figure 1 of the accompanying drawings an air-bag 1 which is in the form of a side-curtain, is formed from two super-imposed layers of fabric 2 inter-connected by a plurality of seams 3 which inter-connect selected areas of the upper and lower layers of fabric forming the air-bag 1. The seams 3 define a gas flow duct 4 extending substantially parallel with the upper edge of the bag, and also define a plurality of substantially vertical parallel spaced cells 5, each of which communicate, by means of a communication region 6, with the gas flow duct 4. The air-bag 1 is also provided with a plurality of protruding lugs 7 which protrude from a position adjacent the gas flow duct 4 by means of which the air-bag may be mounted in position in a motor vehicle.

The air-bag, as thus far described, is formed from an appropriate fabric which may, for example, be a conventional fabric woven from yarns or fibres made from polyamide, polyester, polyvinylchloride or some other appropriate synthetic material, although it is envisaged that the fabric may be knitted or non-woven. The seams 3 may be formed by stitching together the super-imposed layers of fabric, although it is preferred that the seams are fabricated by weaving together threads from the upper layer of fabric together with threads from the lower layer of fabric in selected regions to form the seams, generally as described in WO 90/09295.

Following the initial fabrication of the bag, a reinforcing sealant coating is applied to the interior of the bag. The reinforcing sealant coating is applied to the interior of the bag by forming, on an hollow air injecting mandrel 10 a parison of a plastics material 11, such as a polyamide, polyester or polyvinylchloride material, or polyurethane silicone with the parison being in a substantially plastic state.

The exterior of the parison may be coated with adhesive. The mandrel, together with the parison, is inserted into the gas flow passage 4 of the bag. To

mandrel. Entrained with the propellant gas is a sealant material which, on leaving the mandrel, forms an aerosol or a powder suspension 17 with the propellant gas. The aerosol or powder suspension is therefore injected into the interior of the air-bag by the warm propellant gas. The interior of the air-bag inflates during this process, due to the continuous flow of the propellant gas. Whilst, as mentioned above, the propellant gas may be heated, equally the air-bag itself may be heated by performing the described procedure within a heat chamber or oven.

The propellant gas initially flows out of the air-bag through the fabric material, which is porous, but the sealant material which forms the aerosol or powder suspension becomes entrapped by the fabric and thus this material covers the inner side of the air-bag. Due to the elevated temperature of the gas and/or the elevated temperature of the bag itself, the sealant material that has become trapped on the inner side of the air-bag forms a sealant layer with reinforcing properties.

Thus a reinforcant sealant coating made of a material such as polyamide, polyester, polyvinylchloride or polyurethane silicone is established on the interior surface of the air-bag.

It is envisaged that following the procedure described above, the material that initially formed the parison will constitute a reinforcant sealant coating which covers the whole of the interior of the air-bag. The air-bag itself, however, does not suffer from any additional stiffness and can thus be folded in a conventional manner.

It is to be appreciated that the reinforcing sealant coating is provided on the interior of the air-bag, thus protecting the fabric to be utilised in the fabrication of the air-bag from the heat of any gas injected into the air-bag from the gas generator during inflation of the bag. The fabric 2 provides the bag with substantial

CLAIMS:

1. A method of fabricating an air-bag, the method comprising the steps of forming a bag from at least one layer of fabric, introducing a sealant into the bag and blowing the sealant into contact with the interior of the bag with a propellant gas so that the sealant material forms a sealant layer on the interior of the bag.

2. A method according to Claim 1 wherein the sealant is in the form of a parison of a synthetic polymer material carried on a mandrel, said blowing step consisting of injecting said propellant gas through the mandrel.

3. A method according to Claim 2 wherein the parison is coated with adhesive.

4. A method according to Claim 1 wherein the sealant is introduced into the bag in the form of an aerosol or a suspension of powder in the propellant gas.

5. A method according to any one of the preceding Claims wherein the sealant is formed of polyamide, polyester, polyvinylchloride or polyurethane silicone.

6. A method according to any one of the preceding Claims wherein the bag is heated as the sealant is blown into contact with the interior of the bag.

7. A method according to any one of the preceding Claims wherein the propellant gas is heated.

09/869105

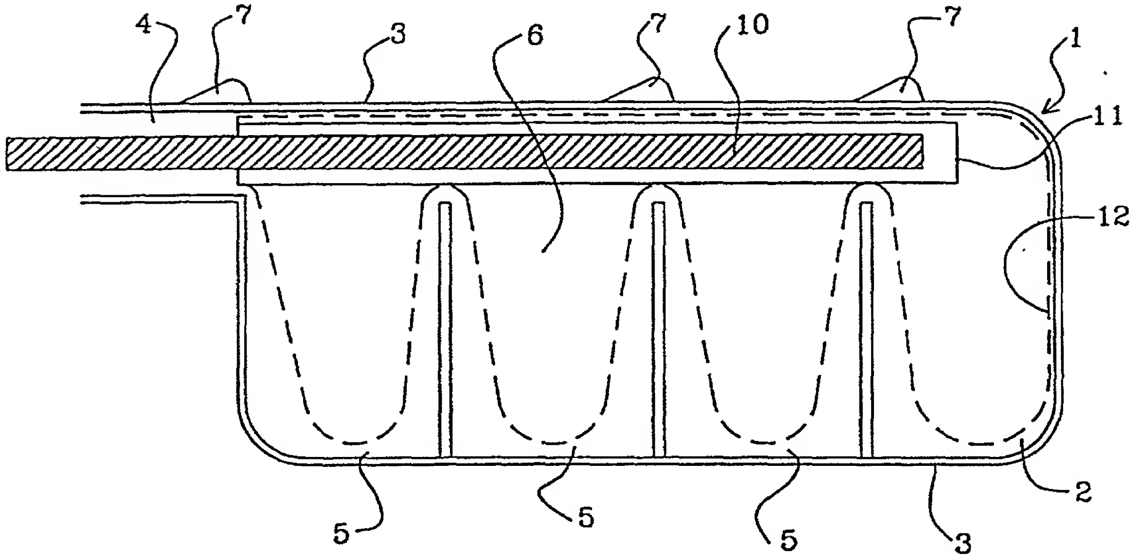

FIG 1

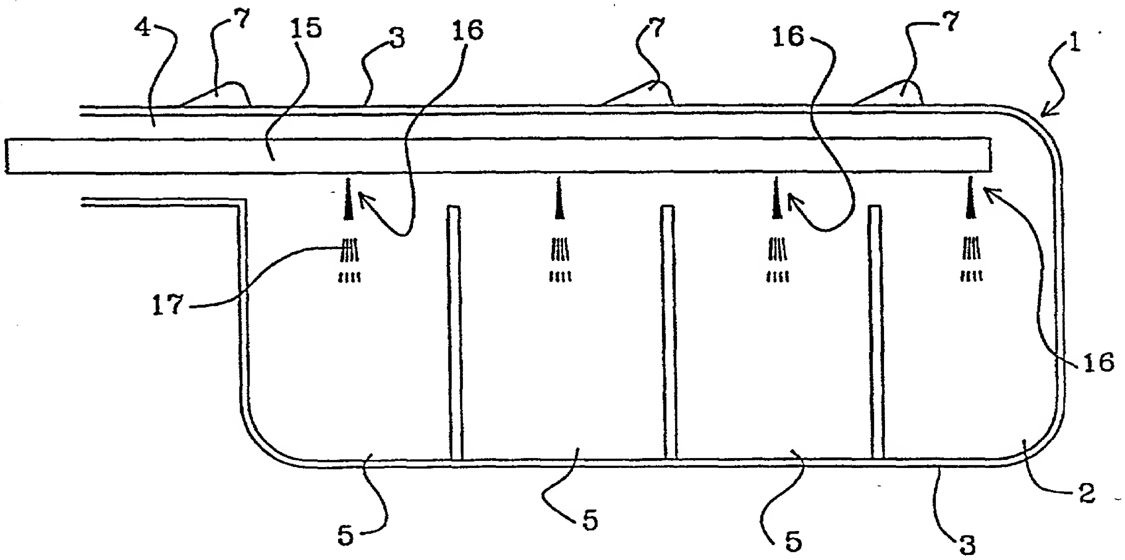

FIG 2

DECLARATION FOR UNITED STATES PATENT APPLICATION
POWER OF ATTORNEY, DESIGNATION OF CORRESPONDENCE ADDRESS

Attorney Docket
31577-170129 RK

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and that I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled A METHOD OF FABRICATING AN AIR-BAG AND AN AIR-BAG FABRICATED BY THE METHOD, the specification of which

[ ] is attached hereto.
[ ] was filed on _____, as Application Serial No. _____, Confirmation No. _____, and was amended on _____ [if applicable].
[X] was filed under the Patent Cooperation Treaty on December 22, 1999 Serial No. PCT/SE99/02460 the United States of America being designated, and was amended on _____ [if applicable].

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, 1.56.

I HEREBY CLAIM foreign priority benefits under Title 35, United States Code §119(a)-(d) of §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application for patent or inventor's certificate or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number	Country	Foreign Filing Date	Priority Claim?	Certified Copy Attached?
9828701.4	Germany	December 24, 1998	Yes	No

I HEREBY CLAIM the benefit under Title 35, United States Code §119(e) of any United States provisional application(s) listed below.

U.S. Provisional Application Number	Filing Date

I HEREBY CLAIM the benefit under Title 35, United States Code, §120 of any United States application(s), or §365(c) of any PCT International application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

U.S. Patent Application Number	PCT Patent Application Number	Patent Filing Date	Parent Patent Number

DECLARATION FOR UNITED STATES PATENT APPLICATION
POWER OF ATTORNEY, DESIGNATION OF CORRESPONDENCE ADDRESS

I hereby appoint the registered attorneys and agents of VENABLE associated with the following customer number to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

26694

PATENT TRADEMARK OFFICE

VENABLE is located at Suite 1000, 1201 New York Avenue, N.W., Washington, D.C. 20005-3917, Telephone: (202) 962-4800, Telefax: (202) 962-8300. Address all correspondence to VENABLE, Post Office Box 34385, Washington, D.C. 20043-9998.

The undersigned hereby authorizes the registered U.S. attorneys and agents identified herein to accept and follow instructions from the undersigned's assignee, if any, and/or, if the undersigned is not a resident of the United States, the undersigned's domestic attorney, patent attorney or patent agent, as to any action to be taken in the Patent and Trademark Office regarding this application without direct communication between U.S. attorneys and the undersigned. In the event of a change in the person(s) from whom instructions may be taken, the registered U.S. attorneys and agents identified herein will be so notified by the undersigned.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Signature: _____ Date: 06-07-, 2001.
First/Joint Inventor: Simon ~~VALKENBURG~~
Citizenship: ~~Netherlands~~/Canada
Residence and Post Office Address: 579 Christina Cresent, Windsor, Essex, Ontario NPG 2M3 Canada CA

Signature: _____ Date: 25/06, 2001.
Second/Joint Inventor: ~~Norbert PITZER~~
Citizenship: Germany
Residence and Post Office Address: Karl-Theodor-Strasse 28, D-85757 Karlsfeld, Germany DEX

Venable
Washington, D.C. 20005

DC2DOCS1\288286